CLAIMS

1. A system for determining the distance between a case and a detector wherein:

said case contains:

an RF transmitter of a RF signal when actuated

an audio transmitter of an audio signal when actuated; and

actuator means for actuating said RF transmitter and said audio transmitter;

said detector containing:

an RF receiver of said RF signal;

an audio receiver of said audio signal; and

means for determining the distance from said case to said detector as a function of the time between the receipt of said RF signal and receipt of said audio signal.

2. The system of claim 1 wherein said detector further comprises means for generating an output signal only when said case is determined to be within a predetermined distance of said detector.

3. The system of claim 1 wherein said case is a simulated explosive device and said actuator simulates activation of said device.

4. The system of claim 3 wherein said detector comprising means for actuating said audio receiver in response to reception of the RF signal.

5. The system of claim 4 wherein said detector further comprises means for authenticating receipt of the audio signal transmitted by said audio transmitter.

6. The system of claim 5 wherein said detector further comprises a programmed detector microprocessor which

   actuates said audio receiver only in response to an indication said RF signal had been received,

   authenticates said audio signal, and

   determines the time between receipt of the RF signal and receipt of the audio signal.

7. The system of claim 6 wherein said detector provides a first indication if the detector is determined to be within a first distance from the case where a person would be killed by a real grenade, and a second indication if the detector is determined to be within a second distance range from the case where a person would by wounded by a real grenade.

8. The system of claim 7 wherein said first and second indications are adjusted by the probability that a person within those distances would be killed or wounded by a real grenade.

9. The system of claim 3 wherein said case is a simulated hand grenade and said actuator comprises:

a trigger that is released when the case leaves an operator's hand, the trigger generating an electrical signal indicative of the release; and

means for delaying actuation of said RF transmitter for a predetermined period after said signal is generated.

10. The system of claim 9 wherein said case further contains a programmed microprocessor case which

actuates said RF transmitter a predetermined time after receipt of a signal indicating said trigger was released; and

actuates said audio transmitter nearly simultaneously with the actuation of the RF transmitter.

11. The system of claim 10 wherein said programmed case microprocessor causes said RF and audio signals to be retransmitted after a delay to increase the probability that said signals are received.

12. The system of claim 10 wherein said programmed case microprocessor further causes said audio transmitter to generate a loud pulse noise simulating the noise of an exploding hand grenade, said pulse noise occurring after said RF and audio signals are transmitted.

13. The system of claim 3 wherein the case is a simulated Claymore mine and further comprises a second audio transmitter and located a known distance from and electrically connected to said case; said case generating said RF signal and audio signals from each of said audio transmitters when actuated; and
said detector further comprises means for determining the angle with respect to the front of the case of the detector from the time between receipt of said RF signal and receipt of each audio signal.

14. The system of claim 13 wherein said predetermined distance is different for different angles.

15. A method for simulating the effect of an explosive device on a detector spaced from the detector comprising:
generating at the location of the explosive device an RF signal and an audio signal;
receiving at the location of the detector the RF signal and audio signal; and
determining at the location of the detector the distance of the generated signals from the detector as a function of the time between receipt of the RF signal and receipt of the audio signal.

16. The method of claim 15 wherein the RF and audio signals are pulse signals.

17. The method of claim 16 further comprising generating at the location of the explosive device an audio signal representative of an explosion.

18. The method of claim 17 further comprising generating an audio signal from each of two spaced transducers near the location of the explosive device; and determining the angle from the location of the explosive device to the location of the detector as a function of the time between receipt of the RF signal and receipt of each audio signal.